REMARKS

The Office Action dated August 18, 2009 has been carefully considered. Claims 1, 5 and 6 have been amended. Claims 2 and 3 have been canceled. Claims 1 and 4-7 are in this application. Claim 1 has been amended to include the limitations of claims 2 and 3. The amendments to claim 1 can be found throughout the specification and in particular on page 6, ¶ [0019]. No new matter has been entered.

The Abstract of the Disclosure was objected to as not in one paragraph form and including indefinite or claim language. The Abstract of the Disclosure has been amended to correct the deficiency.

Original claims 1-7 were rejected under 35 U.S.C. § 112 as indefinite. Claims 1, 5 and 6 have been amended to obviate the Examiner's rejection. Support for the amendments to claim 1 are found throughout the specification and in particular on page 17, ¶ [0054].

The previously submitted claims were rejected under 35 U.S.C. § 103 (a) as being obvious in view of U.S. Patent No. 6,682,494 to Sleichter, III et al. in combination with U.S. Patent No. 4,782,533 to Haynie and U.S. Patent No. 5,216,769 to Eakin and further in combination with U.S. Patent No. 6,6263,532 to Miller. Applicants submit that the teachings of the cited references do not teach or suggest the invention defined by the present claims.

Sleichter, III et al. teach a massaging apparatus comprising a vibrator unit, a main cushion member, an isolation device, and an outer cushion member (Claim 1). The isolation device 20 is interposed between the vibrator unit and the main cushion member for isolating vibrations from the main cushion member (Column 1, 61-63). Suitable materials for the main cushion member 18 and the outer cushion member 21 include conventional closed-cell foam padding such as 2-pound mini-cell polyethylene (Column 6, Lines 42 to 45). A suitable material for the isolation device 20 is Nomex.™ batting fiber, available from Skandia of Rockford, Ill (Column 6, Lines 52-54).

In the outstanding Office Action, the Examiner indicated that "The spring structure also has a layered structure including superficial layers of higher bulk density 18 of closed cell foam. The core layer of batting fiber 20 has a lower bulk density" (Page 3, Lines 7 to 9 from the bottom). In contrast to the invention defined by the present claims Sleichter, III et al., do not

teach or suggest bulk densities and void ratios of the outer cushion member 21 (corresponding to superficial layer of the present claims) and the isolation device 20 (corresponding to the core layer of the present claims). In addition, it is neither disclosed nor suggested in Sleichter, III et al. that a bulk density of the isolation device 20 is lower than that of the outer cushion member 21. Moreover, in Sleichter, III et al., a diameter of a fiber used for the isolation device 20 is neither disclosed nor suggested. In particular Sleichter, III et al. do not teach or suggest that each of the superficial layers has a bulk density of 0.2 to 0.5 g/cm^3 and a void ratio of 44 to 77%, and the core layer has a bulk density of 0.01 to 0.15 g/cm^3 and void ratio of 83 to 99%, a diameter of the filaments composing the resin body with the spring structure is 0.3 to 3.0 mm when the filaments are solid, a diameter of the filaments constituting the resin body with a spring structure is 1.0 to 3.0 mm and a hollow ratio of the filament is 10 to 80% when the filaments are hollow.

As described in ¶ [0045] it has been found that a diameter of the filament correlates with a bulk density and a void ratio of the resin body with a spring structure,

"A void ratio of the resin body with a spring structure 10 may be in the range described below, to maintain its elasticity and strength as long as it exists as a three dimensional structure having a void with a predetermined bulk density, as well as to reduce its weight. Here, void ratio will be decided by the following formula. [Void ratio (%)] = (1- [bulk density]/[density of resin])×100." and

"If the solid filaments had a diameter equal to or smaller than 0.3 mm, the filaments would lose resiliency and fusion of adjacent filaments occurs so frequently that the void ratio of the resin body would become undesirably low." in ¶ [0043]. There is no teaching or suggestion of these features in Sleichter, III et al..

In the outstanding Office Action, the Examiner indicated that "Haynie teaches a conventional thermoplastic resin Dacron ™ as a cushion material." (Page 3, Lines 3 to 2 from the bottom) and that it would be obvious to modify Sleichter, III et al. to us Dacron ™ as taught by Haynie. However, in Haynie, a diameter of a fiber of thermoplastic resin, and a void ratio and a bulk density of cushion wrappings 29, 31 which are composed of the fiber are neither disclosed nor suggested. In particular Haynie does not teach or suggest that each of the superficial layers

has a bulk density of 0.2 to 0.5 g/cm^3 and a void ratio of 44 to 77%, and the core layer has a bulk density of 0.01 to 0.15 g/cm^3 and void ratio of 83 to 99%, a diameter of the filaments composing the resin body with the spring structure is 0.3 to 3.0 mm when the filaments are solid, a diameter of the filaments constituting the resin body with a spring structure is 1.0 to 3.0 mm and a hollow ratio of the filament is 10 to 80% when the filaments are hollow. Accordingly, in the isolation device 20 of Sleichter, III et al., even if thermoplastic resin fiber taught in Haynie is used instead of Nomex™ batting fiber taught in Sleichter, III et al., the resin body with the spring structure according to the present invention will not be achieved. The resin body with a spring structure according to the present invention has a layered structure made of the filaments having a high bulk density as superficial layers are formed on a front and a rear of the resin body with the spring structure in a lengthwise direction, a layer made of the filaments having a low bulk density as a core layer is interposed between the superficial layers, accordingly it is possible to obtain an effect of "sonic wave without distortion is resonated on a hard superficial layer of such a resin body with a spring structure, thereby a sonic system of which a resin body with a spring structure itself is unitedly acted as a part of speakers can be constructed", as described in ¶ [0029].

Furthermore, in Sleichter, III et al., an outer cushion member 21 including a closed-cell padding corresponds to superficial layers of the present invention. In Sleichter, III et al., there is neither disclosed nor suggested that the outer cushion member 21 are composed of filaments functioned as a medium to conduct a wave to the human body, as defined by the present claims. Rather, Sleichter, III et al teach that the outer cushion member 21 has a closed-cell structure which accordingly lacks permeability. As described in ¶ [0007], the use of a cushion having a lack of permeability has the problem that the sound effect is suppressed or sound becomes unclear. Sleichter, III et al. is not directed to improve a sound effect as described in the present invention, but rather is used to conduct vibration of a vibrator. Therefore, from the teachings of Sleichter, III et al. it is not conceivable that the outer cushion member is composed of filaments functioned as a medium to conduct a wave to the human body.

The effect obtained by permeability of the resin body with the spring structure according to the present invention are described as follows:

"The cushion of the present invention can keep sound effects according to a permeability of a resin body with a spring structure of a three-dimensional structure itself, and contact or impact to the speaker by a human body can be prevented during a use of a cushion for a chair, seats or beds or the like for automobile and aircraft by a superficial layer having a high bulk density formed on a front and a rear of the resin body with the spring structure, further, sense of incongruity to a human body generated by the speaker can be completely eliminated." (¶ [0019]); and

"In addition, in the cushion of the present invention, excellent fluidity of acoustic wave can be obtained by the permeability without generating repulsion or restraint of sound, thereby, bodily and/or mental relaxation provided by vibration with sound pressure can be obtained according to audio frequencies. Simultaneously, resonance vibration of the speaker itself can be restrained." (¶ [0020]).

In the outstanding Office Action, the Examiner indicated that Eakin teaches that speakers are an alternative form of vibration therapy and would be an obvious equivalent alternative vibration source. However, Eakin do not teach or suggest that each of the superficial layers has a bulk density of 0.2 to 0.5 g/cm^3 and a void ratio of 44 to 77%, and the core layer has a bulk density of 0.01 to 0.15 g/cm^3 and void ratio of 83 to 99%, a diameter of the filaments composing the resin body with the spring structure is 0.3 to 3.0 mm when the filaments are solid, a diameter of the filaments constituting the resin body with a spring structure is 1.0 to 3.0 mm and a hollow ratio of the filament is 10 to 80% when the filaments are hollow. Therefore, in the isolation device 20 of Sleichter, III et al., even if thermoplastic resin fiber Dacron™ taught in Haynie is used instead of Nomex™ batting fiber taught in Sleichter, III et al., and a speaker taught in Eakin is used instead of a vibrator taught in Sleichter, III et al., the resin body with the spring structure defined by the present claims would not be obtained.

In the outstanding Office Action, the Examiner pointed out that "Miller (US 6,263,532) exemplifies the fact that Dacron™ includes hollow fibers" (Page 4, Lines 10). However, in contrast to the invention defined by the present claims, Miller does not teach or suggest that each of the superficial layers has a bulk density of 0.2 to 0.5 g/cm^3 and a void ratio of 44 to 77%, and the core layer has a bulk density of 0.01 to 0.15 g/cm^3 and void ratio of 83 to 99%, a diameter of

the filaments composing the resin body with the spring structure is 0.3 to 3.0 mm when the filaments are solid, a diameter of the filaments constituting the resin body with a spring structure is 1.0 to 3.0 mm and a hollow ratio of the filament is 10 to 80% when the filaments are hollow. Further, it is neither disclosed nor suggested that a speaker is provided in a cushion. Therefore, in Miller, it is not conceivable to one of ordinary skill in the art the effect of the present invention such that "conduction of a clear high-pitch range can be realized by internal air of the hollow filaments" (¶ [0023]). Accordingly it is not obvious to one of ordinary skill in the art of to employ a hollow fiber taught by Miller for the isolation device 20 of Sleichter, III et al. to realize conduction of a clear high-pitch range.

Accordingly, the invention defined by present claims 1, 4 to 7 are not obvious in view of Sleichter, III et al. alone or in combination with Haynie, Eakin and Miller.

In view of the foregoing, Applicants submit that all pending claims are in condition for allowance and request that all claims be allowed. The Examiner is invited to contact the undersigned should he believe that this would expedite prosecution of this application. It is believed that no fee is required. The Commissioner is authorized to charge any deficiency or credit any overpayment to Deposit Account No. 13-2165.

Respectfully submitted,

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